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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/723,716	11/26/2003	Prathyusha K. Salla	132958XX-B/YOD GEMS:0262	9778
68174	7590	09/01/2009	EXAMINER	
GE HEALTHCARE c/o FLETCHER YODER, PC P.O. BOX 692289 HOUSTON, TX 77269-2289			WEATHERBY, ELLSWORTH	
			ART UNIT	PAPER NUMBER
			3768	
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			09/01/2009	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/723,716	<b>Applicant(s)</b> SALLA ET AL.	
	<b>Examiner</b> ELLSWORTH WEATHERBY	<b>Art Unit</b> 3768	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 17 April 2008.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-40 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-40 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)                       |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____  |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application             |
| Paper No(s)/Mail Date <u>03/20/2009</u> .  | 6) <input checked="" type="checkbox"/> Other: <u>See Continuation Sheet</u> . |

Continuation of Attachment(s) 6). Other: Yuan et al. ("Cardiac-respiratory gating method for magnetic resonance imaging of the heart", Magnetic Resonance in Medicine 43: 314-318, 2000).

## DETAILED ACTION

### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114 was filed in this application after appeal to the Board of Patent Appeals and Interferences, but prior to a decision on the appeal. Since this application is eligible for continued examination under 37 CFR 1.114 and the fee set forth in 37 CFR 1.17(e) has been timely paid, the appeal has been withdrawn pursuant to 37 CFR 1.114 and prosecution in this application has been reopened pursuant to 37 CFR 1.114. Applicant's submission filed on 4/17/2008 has been entered.

### ***Double Patenting***

2. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

3. Claims 1-40 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-32 of copending Application No. 10/723894. Although the conflicting claims are not identical, they are not patentably distinct from each other. Claims 1-32 of the co-pending application recite all the limitations of the present invention. Because both claim identical means for providing image data representative of multiple organ motion profiles, the present application's use of prospective gating does not distinguish it from the co-pending application's retrospective gating. Here, the use of retrospective gating and prospective gating are both well known in the art, as well as, interchangeable in both systems that acquire the same motion data.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

4. Claims 1-40 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-40 of copending Application No. 10/723857. Although the conflicting claims are not identical, they are not patentably distinct from each other. Claims 1-40 of the co-pending application recite all the limitations of the present application including the claims of the present application, including identical means for providing image data representative of multiple organ motion profiles and using the motion data to provide prospective gating and control of an imager.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

***Claim Rejections - 35 USC § 112***

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 5-6, 12-13 and 28-29 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Applicant claims, "...wherein each type of electrical sensor..." or "...wherein each type of non-electrical sensor..". However, the parent claim 1 claim language, "at least one of one or more types of electrical sensors or one or more types of non-electrical sensors" does not always provide support for the dependant claim. Therefore, there is not antecedent basis for the exclusivity of claims 5-6 and 12-13 exclusively requiring *each type of sensor*. Regarding claims 28-29, it is not clear by the claim language whether the motion of two or more organs is referring to the motion of the two or more organs set-forth by the parent claim. For the purposes of examination, the motion of two or more organs will be interpreted as referring to the two or more organs set forth in parent claim 25

***Claim Rejections - 35 USC § 102***

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

8. Claims 1-26, 31, 37-40 are rejected under 35 U.S.C. 102(b) as being anticipated by Yuan et al. ("Cardiac-respiratory gating method for magnetic resonance imaging of the heart", Magnetic Resonance in Medicine 43: 314-318, 2000).

9. Yuan et al. (hereinafter Yuan) teaches a method for imaging an organ with an imager (abstract), comprising the steps of: acquiring a set of motion data for two or more organs from at least one or two of one or more types of electrical sensors (pg. 314, Methods-Device: e.g. multiple ECG leads) or one or more types of non-electrical sensors, e.g. bellows, which is activated with a set of positional data acquired by one or more positional sensors (pg. 314, Introduction; pg. 315, Methods-Device); processing the set of motion data to extract two or more prospective gating points for an organ of interest (pg. 314, Introduction; pg. 314, Methods); and acquiring a set of image data representative of the organ of interest using the two or more prospective gating points (pg. 314, Introduction; pg. 314, Methods-Device). Yuan also teaches reconstructing the set of image data to generate a set of reconstructed data and generating an image from the set of reconstructed data (pg. 314, Introduction: e.g. k-space gradient-echo

sequence allowed...cardiac images to be acquired). Yuan further teaches that wherein generating the image comprises fusing a set of image data representative of structure with at least one of a set of image data representative of motion or a set of image data representative of electrical activity (pg. 317, Analysis; pg. 317, Discussion). Yuan also teaches that the set of motion data is at least partially acquired from a set of pre-acquisition image data (pg. 315, Analysis). Yuan further teaches an operator workstation configured to communicate with the system control circuitry and to receive the processed plurality of signals from the data processing circuitry (pg. 314, Introduction; pg. 315, Device).

### ***Claim Rejections - 35 USC § 103***

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. Claims 27-30, 32-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yuan et al. ("Cardiac-respiratory gating method for magnetic resonance imaging of the heart", Magnetic Resonance in Medicine 43: 314-318, 2000) in view of Schlossbauer et al. (Pub. No.: 2002/0091314).

12. Yuan et al teaches all the limitations of the claimed invention except for expressly teaching activating two or more electrical sensors for the sensor-based motion measurement based on the position of the two or more electrical sensors relative to the



imager. Yuan also does not expressly teach using an electrical sensor to track the second organ. Yuan also does not expressly teach measuring non-electrical activity indicative of the motion of two or more organs via one or more non-electrical sensors.

13. In a related field of endeavor, Schlossbauer et al. (hereinafter Schlossbauer) teaches breath compensation in image based radiotherapy (abstract). Schlossbauer also teaches activating two or more electrical sensors for the sensor-based motion measurement *based* on the position of the two or more electrical sensors relative to the imager, or alternatively, using a plurality of other electrical or non-electrical means (0008-0009; 0020-0030; 0051).

14. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the dual triggered imaging of Yuan in view of the position sensors of Schlossbauer. The motivation to modify Yuan in view of Schlossbauer would have been to utilize any known means for tracking periodic motion included the well known sensor tracking, as evidenced by Schlossbauer.

### ***Response to Arguments***

15. Applicant's arguments with respect to claims 1-40 have been considered but are moot in view of the new ground(s) of rejection.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ELLSWORTH WEATHERBY whose telephone number

is (571) 272-2248. The examiner can normally be reached on M-F 8:30 a.m. - 5:00 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Long Le can be reached on (571) 272-0823. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/EW/

/Long V Le/  
Supervisory Patent Examiner, Art Unit 3768